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ABSTRACT

Previous studies have shown a relationship between desensitization/relaxation and anxiety reduction but have failed to investigate the effect on other personality variables. To determine the effects of desensitization/relaxation (SD/R) and transactional analysis (TA) on locus of control, anxiety, self-esteem, and achievement, 54 college students were assigned to either a SD/R or TA treatment group or a placebo group. Analyses of pre- and post-test scores on anxiety, self esteem, locus of control, and achievement scales indicated that a high level of anxiety was reduced significantly and a significant change from external to internal locus of control was found, irrespective of the experimental treatment received. Also, a low self-esteem was improved significantly through TA treatment. Results also revealed a significant improvement in achievement scores for the two experimental groups, but not for the control group. Thus, it appears that achievement is related to affective variables, and the educational and psychological growth of students are interdependent. (Author/JAC)

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EFFECTS OF TWO TREATMENTS ON ANXIETY, SELF-CONCEPT AND LOCUS OF CONTROL

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ABSTRACT

Effects of Two Psychological Experiential
Treatments on Anxiety, Self-Concept, and Locus of Control

The purpose of this study was to determine the effects of desensitization/ relaxation (SD/R) and transactional analysis (TA) on the selected personality variables, locus of control, anxiety, self-esteem, and achievement.

There were three groups in this study which received a pre-test and a post-test Experimental group I received TA as the treatment, experimental group II received SD/R as the treatment and group III received the placebo treatment.

The results of this study indicated that a high level of anxiety was reduced significantly and a significant change from external to internal locus of control was found, irrespective of the experimental treatment received. Also, this study showed that a low self-esteem was improved significantly through the treatment of T.A. Finally the results revealed a significant improvement in achievement across the two experimental groups, but not for the control group.

INTRODUCTION

Psychological programs and psychological education are increasingly being seen as an important function of the school counselor and teacher. Commercially developed programs in psychological education have appeared on the scene for years. Their usage creates a need to research their effects on improvement and to identify the variables influencing their outcomes. Research is needed to determine which type of psychological education is most beneficial to which group of students and under what conditions.

In recent years, a number of educational and psychological programs have emerged. One such program that has received a lot of attention and research is desensitization/relaxation training. This involves the act of alleviating or removing a mental complex (Hinsie & Campbell, 1970). Desensitization/relaxation training begins by identifying the stimuli that provoke anxiety in the subject. Next, the subject is trained in a system of progressive deep muscle relaxation which may require several sessions. Finally, the subject, in a relaxation state, is told to imagine as vividly as possible the distressing situation without anxiety (Lefrancois, 1980). A great amount of care is taken not to arouse anxiety during this process of gradually approaching the distressing situation. If anxiety is evoked, the therapist terminates the imagery production and brings the subject back to a relaxed state.

Another educational and/or psychological program is transactional analysis (TA). The aims of this program are (1) to give the subject an introduction to the major concepts of TA and (2) to allow the subjects, through exercises and group participation, to discover and validate as much as possible from their own insights and experiences (Berne, 1964).

Originally TA was developed as a method of psychotherapy to be used in group treatment (Berne, 1964). The group then serves as a setting in which subjects can become more aware of themselves, the structure of their individual personality, how they transact with others, the games they play, and the scripts they act out (Coon, 1980).

This awareness enables the subjects to see themselves more clearly so that they can change and strengthen what they need to strengthen (James and Jongward, 1971). TA is a useful tool for those in psychotherapy; it also provides a thought-provoking perspective of human behavior that most people can understand and put to use. TA gives a person a rational method for analyzing and understanding behavior by using words that are simple and direct instead of psychological or scientific jargon. For example, the major parts of the personality are called Parent, Adult, and Child.

Although a great amount of attention is being given to psychological and educational programs, there is a lack of research demonstrating the impact of these programs on the measurable personality variables such as anxiety, self-esteem, and locus of control. Previous studies have shown a relationship between desensitization/relaxation and anxiety reduction, but have failed to investigate the effect on other personality variables such as self-esteem and locus of control. Finally, research

demonstrating that TA has a measurable impact on a student's self-esteem, anxiety, and locus of control is lacking.

This study focused on two types of programs in psychological education: desensitization/relaxation and transactional analysis.

A special interest in this study was the comparative impact of these two programs on the subject's personality variables of anxiety, self-esteem, locus of control, and achievement scores.

RESEARCH METHODOLOGY

The purpose of this study was to assess the effectiveness of two experiential psychological programs (independent variables) in changing the participants' anxiety level, self-esteem, locus of control, and course examination grades (dependent variables). Specifically, this study was designed to answer the following questions:

1. Would transactional analysis and desensitization programs significantly change the anxiety level, self-esteem, locus of control, and course examination grades for subjects?

2. Would these changes in anxiety level, self-esteem, locus of control, and course examination grades be significantly different between the transactional analysis training groups, the desensitization training groups, and the control groups?

To examine these questions the hypotheses in the following section were developed. A significance of .05 was used to test each hypothesis.

The null hypotheses on the equivalence of the treatment effect for the three treatment groups were tested with the four dependent measures. Alternative hypotheses of interest were derived for the three group comparisons for each of the dependent variables. Finally, three directional or research hypotheses are stated below for each dependent variable.

Hypotheses

Anxiety dependent variable

1. Subjects who receive relaxation training as the treatment will have less anxiety than the subjects who receive the transactional analysis (TA) treatment as assessed by the mean pretest and mean posttest scores on the Taylor Manifest Anxiety Scale (TMAS).

2. Subjects who receive transactional analysis (TA) as the treatment will have less anxiety than the subjects who receive the placebo treatment as assessed by the mean pre- and mean posttest scores on the Taylor Manifest Anxiety Scale (TMAS).

3. Subjects who receive relaxation training as the treatment will have less anxiety than the subjects who receive the placebo treatment as assessed by the mean pretest and mean posttest scores on the Taylor Manifest Anxiety Scale (TMAS).

Locus of control dependent variable

4. Subjects who receive transactional analysis (TA) as the treatment will have less external locus of control than the subjects who receive the relaxation training treatment as assessed by the mean pretest and mean posttest scores on the Nowicki-Strickland Locus of Control Scale (LCS).

5. Subjects who receive transactional analysis (TA) as the treatment will have less external locus of control than subjects who receive the placebo treatment as assessed by the mean pretest and mean posttest scores on the Nowicki-Strickland Locus of Control Scale (LCS).

6. Subjects who receive relaxation training as the treatment will have less external locus of control than the subjects who receive the placebo treatment as assessed by the mean pretest and mean posttest scores on the Nowicki-Strickland Locus of Control Scale (LCS).

Self-esteem dependent variables

7. Subjects who receive transactional analysis (TA) treatment will have a higher self-esteem than subjects who receive the relaxation training treatment as assessed by the mean pretest and mean posttest scores on the Coopersmith Self-Esteem Inventory (SEI).

8. Subjects who receive relaxation training as the treatment will have a higher self-esteem than subjects who receive the placebo treatment as assessed by the mean pretest and mean posttest scores on the Coopersmith Self-Esteem Inventory (SEI).

9. Subjects who receive transactional analysis (TA) as the treatment will have a higher self-esteem than subjects who receive the placebo treatment as assessed by the mean pretest and mean posttest scores on the Coopersmith Self-Esteem Inventory (SEI).

Achievement dependent variable

10. Subjects who receive transactional analysis (TA) as the treatment will show a higher increase in their achievement scores than subjects who receive the relaxation training as assessed by a course unit examination before treatment and a course unit examination after treatment.

11. Subjects who receive relaxation training as the treatment will show a higher increase in their achievement scores than subjects who receive the placebo treatment as assessed by a course unit examination before treatment and a course unit examination after treatment.

12. Subjects who receive transactional analysis (TA) as the treatment will show a higher increase in their achievement scores than subjects who receive the placebo treatment as assessed by a course unit examination before treatment and after treatment.

Target Population and Design

East Arkansas Community College (EACC) is located in Forrest City, Arkansas. Forrest City has approximately 14,000 people and is 45 miles west of Memphis, Tennessee. The college was organized in 1974 and was serving more than 900 students when this study was conducted. The average age of the students was 28.1 years. Thirty-two percent of the students were black and 68% of the students were white while 73% were female and 27% were males. Approximately 20 different high schools were represented; however, the majority of the students came from the schools located in Forrest City, Wynne, Hughes, and Parkin, Arkansas.

Students enrolled in the Social Science Division at EACC during the spring 1981 semester were the population for this study. There were 148 available students registered in seven different sections. After administering the self-esteem inventory, the anxiety scale, and the locus of

control questionnaire and scoring them, the means were determined. Students scoring below the self-esteem mean and students scoring above the locus of control and anxiety means were randomly assigned to the two experimental groups and a control group. There was a total of 54 students used to form the sample for this study.

Method for Subject Assignment

Figure 1 is a graphic presentation of the subject assignment method that was used in this study. After scoring the different inventories, the 74 students scoring above or below the respective means were asked for their consent to participate. After random assignment of treatments to the study groups, the subjects were randomly assigned to each of the three treatment groups.

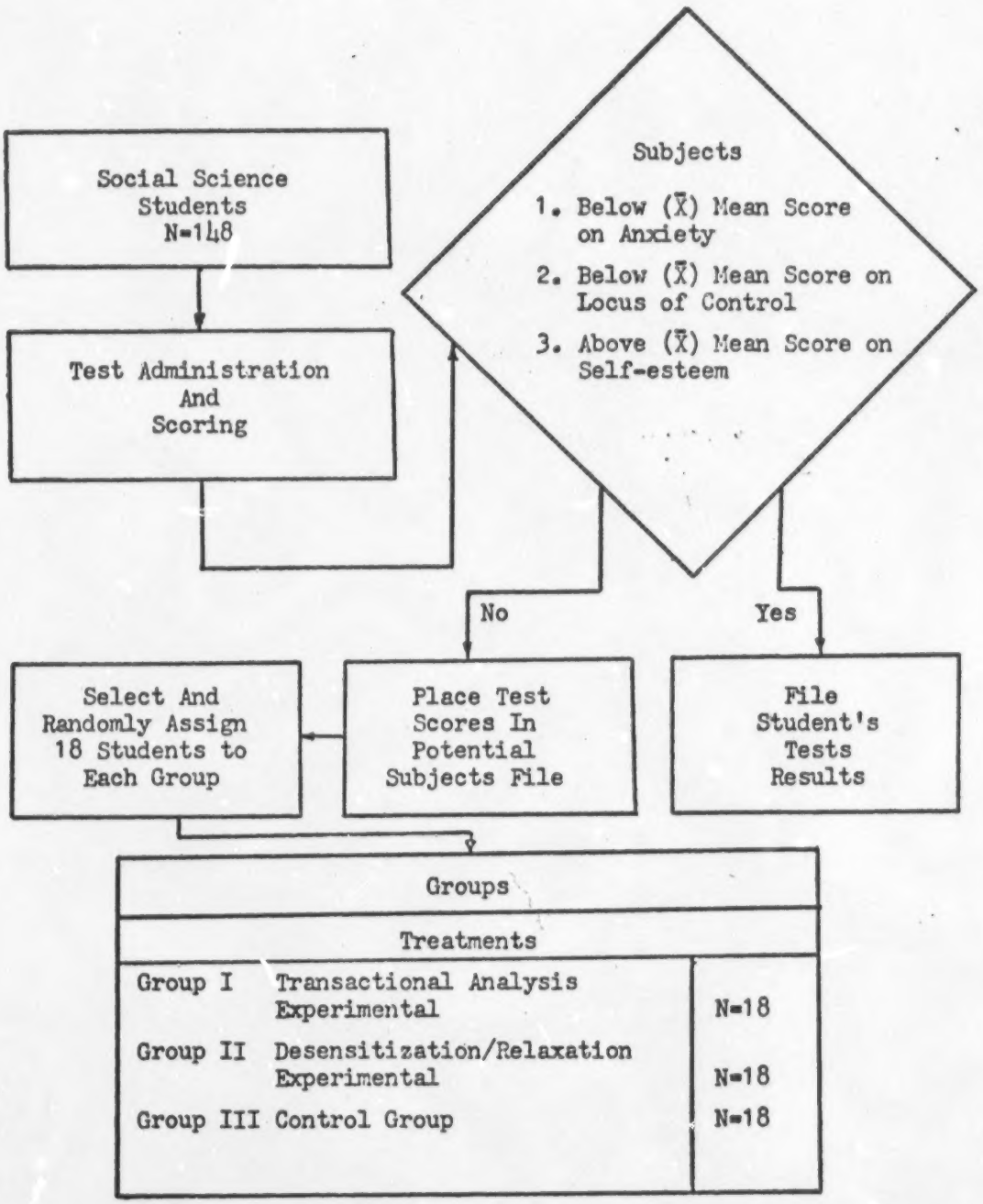
Research Design

During the first part of the 1981 spring semester, the Self-esteem Inventory, the Nowicki-Strickland Locus of Control Scale, and the Taylor Manifest Anxiety Scale were administered to Social Science students at EACC. The purpose of this survey was to determine the mean scores of each of the inventories and to generate a population for the experiment.

After scoring and making random assignments, the treatment began for the three treatment groups. One active treatment group received a training program of group systematic desensitization developed for EMA Audio Cassette Programs by Thomas H. Budzynski, Ph.D. The second active treatment group received a training program consisting of Transactional Analysis, a social and communication training program developed for the

Figure 1

Flowchart for Selecting and Assigning
Subjects to Treatments



Human Development Institute by David S. Abbey, Ph.D. and Ronald H. T. Owston.

The TA program consists of an audio cassette, a manual, a games book, and six figures booklets. The cassette produced by the author introduces the program. The manual was opened by any participant, but usually the therapist reads the first page of directions. The manual was passed from one group member to the next at indicated points in the program. The person with the manual at the moment was the "leader". Leadership, therefore, rotated throughout the group.

As the manual was rotated, a comfortable and enlightening interaction began. Participants were guided to new understandings of why they are the way they are and why others react to them the way they do. These insights can be examined and tested even as they are gained. This program allows individuals to share information about themselves--when and if they choose to do so.

The desensitization program consists of six different cassette tapes with six different exercise elements designed to teach body/mind relaxation. Since most people do not realize which of their muscles are tense, progressive relaxation provides a way of identifying particular muscles and muscle groups and distinguishes between sensations of tension and deep relaxation.

At each session the subjects were instructed to verbalize their sensations and then to get into a comfortable position and relax. The therapist used each exercise element and tape in sequence. The desensitization cassette tape sequence was as follows: exercise 1 was tense-slo-relax, exercise 2 was differential relaxation, exercise 3 was limb heaviness,

exercise 4 was arms and legs heavy and warm, exercise 5 was forehead and facial relaxation, and exercise 6 was anxiety management.

The third group was the control group that received the placebo treatment (Appendix E). The characteristics of this treatment, the placebo manipulations, included presentations of the instruction and a form of false training similar to the active treatment groups in length and time (Tobias, 1979).

The control group did not receive the active treatment but did receive a treatment not designed to alter the anxiety level, locus of control, or self-concept of the subjects. The control group received experiences and did practice exercises to develop an understanding of group dynamics and effective group skills. The experiences and exercises were integrated into an inquiry or experiential approach to learning about the aspects of small groups. The control group did the following group exercises:

1. Introductions
2. Self-knowledge exercise
3. What I value exercise
4. Fall-out shelter exercise
5. Hidden agenda exercise
6. Stranded in the desert exercise
7. Moral dilemma exercise
8. Island simulation exercise
9. "How well do I participate" exercise
10. Working with groups exercise

The control group, therefore, had two purposes: to provice a comparison for the treatment groups and to provide a variety of exercises in which the subjects participated to develop group skills. After treatment, all subjects were administered a posttest on the three personality variables. The dependent variables in this study were as follows:

1. anxiety level as measured by the TAS
2. self-esteem as measured by the SEI
3. locus of control as measured by ANS-IE
4. examination scores of all subjects, as measured by a unit test in the social science course

The independent variables in this study were the three different types of intervention treatments:

1. desensitization training (experimental group I)
2. transactional analysis (experimental group II)
3. group exercises (control group)

Statistical Analysis

Data were gathered from pretest and posttest administrations of the Taylor Manifest Anxiety Scale, Coopersmith's Self-esteem Inventory, Nowicki-Strickland Locus of Control Scale (Adult Form), and unit examinations. Subjects were classified according to treatment (desensitization group, TA group, and control group).

The posttest scores of the three pretested groups on each personality measure were examined by a one-way analysis of covariance (ANCOVA) using the pretest scores as covariates. Pre-achievement scores and post-achievement scores were also treated with ANCOVA. ANCOVA is a statistical procedure appropriately used for pretest-posttest designs. Kennedy (1978) describes ANCOVA as follows:

> ANCOVA represents a marriage between conventional analysis of variance and regression analysis. One of the functions served by this marriage is the improvement of design efficiency. In ANCOVA, information is obtained on a concomitant variable, called either a covariable or a covariate and this concomitant information is used within a regression context to purify or reduce error variance (p. 402).

ANCOVA controls for initial differences; and its effect is to make the groups statistically equal with respect to one or more control variables. It is utilized in situations where one or more variables cannot be held

constant because of practical limitations associated with the conduct of the experiment (Huitema, 1980). The Biomedical Computer Programs P-Series (EMDP-77) computer program was utilized in the analyses (Dixon & Brown, 1977).

Test of Hypotheses

Twelve alternative hypotheses were examined in this study. The first three alternative hypotheses concerning anxiety levels were examined by analysis of covariance (ANCOVA).

Anxiety dependent variable

Hypothesis 1: Subjects who receive relaxation training as the treatment will have less anxiety than the subjects who receive the transactional analysis (TA) treatment as assessed by the mean pretest and mean posttest scores on the Taylor Manifest Anxiety Scale (TMAS).

Hypothesis 2: Subjects who receive transactional analysis (TA) as the treatment will have less anxiety than the subjects who receive the placebo treatment as assessed by the mean pretest and mean posttest scores on the Taylor Manifest Anxiety Scale (TMAS).

Hypothesis 3: Subjects who receive relaxation training as the treatment will have less anxiety than the subjects who receive the placebo treatment as assessed by the mean pretest and mean posttest scores on the Taylor Manifest Anxiety Scale (TMAS).

The pretest and posttest mean anxiety scores and the adjusted group mean scores of the three treatment groups, as shown in Table 1, were compared by using ANCOVA. The pretest anxiety scores served as covariates and the associated regression coefficient for anxiety was .901. Three tests are related to the analysis of covariance. As shown in Table 2, the first test in the analysis of covariance table is for the equality of the adjusted cell means. The results indicate that the computed F value of 3.606 has a probability of .036. This statistically demonstrates that at least one pair of the treatment group means does differ significantly at the .05 level.

An important assumption underlying the correct usage of ANCOVA is that the population regression slopes associated with the treatment populations are equal (Huitema, 1980). This is the second test of zero slope for the covariates and the third test for equality of slopes. The zero slope effect was significant at .000 (Table 2), indicating that there is a significant relationship between the covariate and posttest scores. This indicates that the ANCOVA would effectively reduce the estimate of error variance for true experiments (Kennedy, 1978). The equality of slopes is not significant at .570 (Table 2) which indicates that the slopes are homogeneous and the adjusted means are adequate descriptive measures; therefore, it appears that the effects are the same at different levels of the covariate. If the slopes were heterogeneous, which they are not, the treatment effects would not be the same for the different levels of the covariate (pretest); consequently, the adjusted mean would then be misleading because they would not convey this

There were three groups in this study and the F test for anxiety embedded within the ANCOVA was significant; thus a follow-up t test between the adjusted means for each pair of group means was performed. Table 3 indicates that the follow-up t test for experimental group I and experimental group II is not significant at the .05 level. The adjusted group mean for experimental group I was 15.988 compared to 16.958 for experimental group II (Table /). Since there was no significant difference found between the two experimental groups on the post-test scores of anxiety, the alternative hypothesis 1 was not supported. However, there was a significant difference found in the other two comparisons. The difference found between the experimental group I (TA) and the control group had a probability of .016 which is significant at the .05 level. The adjusted mean for experimental group I was 15.988 compared to 22.120 for the control group (Table /). Since the t value of 2.50 is significant, the alternative hypothesis 2 was supported because the post anxiety level of experimental group I is less than for the control group. Also, there was a significant difference found between the experimental group II (SD/R) and the control group. The t value for the two comparison groups was 2.09 which has a probability of <.05. The adjusted group mean for experimental group II was 16.958 compared to 22.120 for the control group (Table /). Alternative hypothesis 3 was supported because the post anxiety level of experimental group II is less than for the control group.

Locus of control dependent variable

The next three alternative hypotheses concerning the locus of control were also examined by analyses of covariance (ANCOVA).

> Hypothesis 4: Subjects who receive transactional analysis (TA) as the treatment will have less external locus of control than the subjects who receive the relaxation training as assessed by the mean pretest and mean posttest scores on the Nowicki-Strickland Locus of Control Scale (LCS).
>
> Hypothesis 5: Subjects who receive transactional analysis (TA) as the treatment will have less external locus of control than subjects who receive the placebo treatment as assessed by the mean pretest and mean posttest scores on the Nowicki-Strickland Locus of Control Scale (LCS).
>
> Hypothesis 6: Subjects who receive relaxation training as the treatment will have less external locus of control than the subjects who receive the placebo treatment as assessed by the mean pretest and mean posttest scores on the Nowicki-Strickland Locus of Control Scale (LCS).

The pretest and posttest mean locus of control scores and the adjusted group mean scores for the three treatment groups, as shown in Table 4, were tested by using ANCOVA. The pretest locus of control scores served as the covariate. The regression coefficient for the covariate was .438. The results presented in Table 5 indicate that the computed F value is 7.369, and has a probability of .001. Statistically this indicates that at least one pair of the treatment group means does differ significantly at the .05 level.

Table 5 also shows that the population regression slopes associated with the treatment populations are equal. This is shown as the zero slope and the equality of slopes which have probabilities of .023 and .127 respectively. One is significant and the other one is not which indicates that there is a significant relationship between the covariate and the posttest score and that the slopes are homogeneous and the adjusted means are adequate descriptive measures because the treatment effects are the same,

A follow-up t test of significance between the adjusted means for each pair of group means (Table 6) was performed to determine which treatment means were significantly different. The follow-up t test of 1.41 indicates no significance difference at the .05 level between the two experimental groups. The adjusted group mean for experimental group I was 7.747 compared to 9.905 for experimental group II (Table 4 therefore, hypothesis 4 was not supported. A significant difference was found between the experimental group I (TA) and the control group. The t value for these two groups is 3.80 which has a probability of .0005. The adjusted mean for experimental group I was 7.747 compared to 13.613 for the control group (Table 4). The alternative hypothesis 5 was supported because the post locus of control score for experimental group I is less than for the control group. Also, there was a significant difference between the experimental group II and the control group. The t value for these two groups is 2.41 which has a probability of .02. The adjusted group mean for experimental group II was 9.905 compared to 13.613 for the control group (Table 4). The alternative hypothesis 6 was supported because the post locus of control score for experimental group II is less than for the control group.

Hypothesis 7: Subjects who receive transactional analysis (TA) treatment will have a higher self-esteem than subjects who receive the relaxation training treatment as assessed by the mean pretest and mean posttest scores on the Coopersmith Self-esteem Inventory (SEI).

Hypothesis 8: Subjects who receive relaxation training as the treatment will have a higher self-esteem than subjects who receive the placebo treatment as assessed by the mean pretest and mean posttest scores on the Coopersmith Self-esteem Inventory (SEI).

Hypothesis 9: Subjects who receive transactional analysis (TA) as the treatment will have a higher self-esteem than subjects who receive the placebo treatment as assessed by the mean pretest and mean posttest scores on the Coopersmith Self-esteem Inventory (SEI).

The pretest and posttest mean self-esteem scores and the adjusted group mean scores of the three treatment groups, as shown in Table 7, were tested by using ANCOVA. The pretest self-esteem scores served as covariate and the regression coefficient for self-esteem was .529. The results presented in Table 8 indicate that the computed F value for self-esteem is 3.264 which has a probability of .048. This indicates that statistically at least one pair of the treatment group means does differ significantly at the .05 level. Table 8 also shows that the populations are equal. This is shown by the probabilities for the zero slope and the equality of slopes which are .0005 and .464 respectively. One is significant and the other is not which indicates there is a significant relationship between the covariate and the posttest score and that the slopes are homogeneous and the adjusted means are adequate descriptive measures because the treatment effects are the same at different levels of the covariate. The individual slopes of .126 (TA), .592 (SD/R), and .764 (control) are different only because of sampling error.

A follow-up t test of significance between the adjusted means for each pair of group means (Table 9) was performed to determine which treatment or treatments were significantly different. The follow-up t test of -2.39 with a probability of .02 indicates that a significant difference was found between the means of the two experimental groups on the posttest scores of self-esteem. The adjusted group mean for experimental Group I was 77.694 compared to 62.086 for experimental group II (Table 7). Hypothesis 7 was supported because the self-esteem score for experimental group I was greater than for experimental group II.

No significant difference was found between the experimental group I and the control group. The t value for the two groups is -1.98 which is not significant at the .05 level. The adjusted group mean for experimental group I was 77.694 compared to 64.752 for the control group (Table 7). The alternative hypothesis 8 was not supported because there is no difference in the self-esteem scores between the experimental group I and the control group. Also, no significant difference was found between the experimental group II and the control group. The t value for the two groups is .408 which is not significant at the .05 level. The adjusted group mean for experimental group II was 62.086 compared to 64.752 for the control group (Table 7). The alternative hypothesis 9 was not supported because there is no difference in the self-esteem scores between the experimental group II and the control group.

Hypothesis 10: Subjects who receive transactional analysis (TA) as the treatment will show a higher increase in their achievement scores than subjects who received the relaxation training as the treatment, as assessed by a course unit examination before treatment and a course unit examination after treatment.

Hypothesis 11: Subjects who receive relaxation training as the treatment will show a higher increase in their achievement scores than subjects who receive the placebo treatment as assessed by a course unit examination before treatment and a course unit examination after treatment.

Hypothesis 12: Subjects who receive transactional analysis (TA) as the treatment will show a higher increase in their achievement scores than subjects who receive the placebo treatment as assessed by a course unit examination before treatment and after treatment.

The pretest and posttest achievement grade scores and the adjusted group mean scores of the three treatment groups, as shown in Table 10, were tested by using ANCOVA. The pre-treatment unit examination score served as covariate and the regression coefficient for achievement scores was .840.

The results presented in Table 11 indicate that the computed F value of 9.372 for achievement has a probability of .000. This shows that at least one pair of the treatment group means does differ significantly at the .05 level. Table 11 also shows that the population regression slopes associated with the treatment populations are equal. This is shown by the zero slope and the equality of slopes which have probabilities of .000 and .417 respectively. The former is significant and the latter is not which indicates there is a significant relationship between the covariate and the posttest score and that the slopes are homogeneous and the adjusted means are adequate descriptive measures because the achievement grade effects are the same at different levels of the covariate. The individual slopes of .756 (TA), .910 (SD/R), and .835 (control) are different only because of sampling fluctuation.

A follow-up *t* test of significance between the adjusted means for each pair of group means for achievement scores was performed (Table 12) to determine which treatment or treatments were significantly different. The follow-up *t* test of -1.65, which was not significant at the .05 level, indicates no significant difference between the two experimental groups on the posttest scores of achievement. The adjusted group mean for experimental group I was 9.053 compared to 8.400 for experimental group II (Table 10). Thus, hypothesis 10 was not supported. A significant difference was found between the experimental group I (TA) and the control group. The *t* value for the two groups is -4.30 which has a probability of .0001. Alternative hypothesis 11 was supported because the achievement score for experimental group I was greater than for the control group. The adjusted group mean for experiment group I was 9.053 compared to 7.346 for the control group (Table 10). Also, there was a significant difference found between the experimental group II and the control group. The *t* value for these two groups is -2.64 which has a probability of .012. The adjusted group mean for experimental group II was 8.400 compared to 7.346 for the control group (Table 10). The alternative hypothesis 12 was supported because there is a difference in the achievement scores of the two groups. The achievement score for experimental group II was larger than for the control group.

Supplemental Findings

Correlation analysis of all possible pairs of the dependent variables (Table 13) were performed using the Pearson product-moment correlation coefficient. Correlations were calculated to ascertain if there were significant relationships between the different personality measures or dependent variables and covariates.

As might be expected, Table 13 shows that the pretest and posttest scores for each variable correlate significantly with each other at the .016 level or less and in the positive direction. The correlation coefficient -.452 suggests that there is a significant negative correlation between the posttest score of self-esteem and the posttest score of anxiety. The correlation coefficient .429 indicates that there is a significant correlation between the posttest score of locus of control and the posttest score of anxiety. The correlation coefficient -.330 suggests that there is a significant negative correlation between the posttest scores of anxiety and the post-treatment achievement scores. The correlation coefficients of -.326 and -.375 suggest that there are significant negative correlations between the pretest and posttest locus of control scores and posttest self-esteem scores. Finally, the correlation coefficients of -.505 and -.556 show that there are significant negative correlations between the pretest and posttest achievement scores and posttest locus of control scores.

EFFECTS OF TWO
PSYCHOLOGICAL EXPERIENTIAL TREATMENTS
ON ANXIETY, SELF-CONCEPT, AND LOCUS OF CONTROL

Summary and Conclusions

The purpose of the study was to compare the effects of two educational programs of transactional analysis and relaxation/desensitization and the effects of a control group on self-esteem, locus of control, anxiety levels, and achievement scores of community college students. The sample consisted of 54 students who were randomly selected and agreed to take part in the study. Eighteen individuals were selected to participate in the three different groups. Forty-four students completed the three different programs. Specifically, 15 in each experimental group completed the educational program. The control group consisted of 14 students who received group skill training.

"Transactional Analysis in Social and Communications Training," an educational and growth program, was utilized as one of the psychological training programs to determine the effects on self-esteem, anxiety, locus of control, and achievement. The program emphasized the processes of awareness, responsibility, and decision making. These concepts are the bases of the implementation of TA; when a person understands and employes these concepts, the person can decide to change. The purpose of this program was to combine a theoretical and experiential approach to applying transactional analysis in education and/or personal life.

"Systematic Desensitization/Relaxation Training Program" was utilized as the other psychological program to determine the effects on self-esteem, anxiety, locus of control, and achievement. The relaxation training program was a voluntary training sequence that consisted of six exercise elements designed to teach body/mind relaxation. A series of relaxation exercises both explained and paced these sessions. The subjects are actually talked through a progressive sequence of stress-reducing physical and mental adjustments.

The program for the control group involved the presentation of therapy instructions and a suggestion for improvement on the personality variables. Also, the control group participated in practice exercises to develop an understanding of group dynamics and effective group skills.

Relevant data were collected by the use of the following instruments: (see appendix B)

1. Taylor's Manifest Anxiety Scale
2. Coopersmith's Self-esteem Inventory
3. Nowicki-Strickland Locus of Control Scale for Adults
4. Unit Course Examinations

The differences in self-esteem scores, anxiety scores, locus of control scores, and examination scores for each of the three treatment groups were compared by an analysis of covariance. Results of the study showed that, in general, the TA program had more of an impact on self-esteem than the other experimental group. Also, the TA program had more of an impact on locus of control, anxiety, and achievement than the control group. The relaxation program had more of an impact on anxiety, locus of control, and achievement than the control group. (see appendix C)

The results of this study indicated a significant improvement or a decrease in anxiety for the subjects when either of the two experimental treatments (TA and SD/R) was utilized. There was no significant

difference in the improvement or decrease in anxiety for the subjects when comparing the two experimental treatments. Both experimental treatments appear to have similar affects on the reduction of anxiety. Thus, anxiety can be successfully reduced by either the TA or SD/R treatment which, in turn, might help to improve achievement and learning.

This study showed a significant improvement of subjects in locus of control from external locus of control to a more internal locus of control. The two experimental groups (TA and SD/R) showed a significant improvement or a move from external to internal locus of control when the experimental treatments were utilized. There was no significant difference on the improvement in the locus of control between the two experimental treatments. Thus, both experimental treatments appear to have similar effects on developing an internal locus of control. Thus, it appears that TA and SD/R can help subjects develop an internal locus of control which might then help improve achievement and learning.

This study indicated a significant improvement in positive self-esteem for the TA group when the TA group was compared to the SD/R group. No significant improvement in self-esteem was found when the control group was compared to the SD/R experimental group and the TA experimental group. Therefore, it appears that TA was the only treatment that helped the subjects develop a more positive self-esteem. TA does affect the self-esteem.

Finally, this study demonstrated that neither of the experimental groups was superior to the other in affecting achievement; however, both experimental groups were significantly better than the control group. Achievement scores for the control group did not change from

the pre-examination to the post-examination. This indicates that the treatment for the control group had little or no effect on achievement. Thus, it seems that the two educational programs can and do affect the achievement level of students, even though the TA treatment appears to have more of an effect on achievement than the SD/R treatment even though the difference was not significant.

The present research has served as an exploratory analysis of some crucial elements in education. The results imply some information that could be of practical value to administrators and instructors.

There does appear to be a relationship between anxiety, locus of control, self-esteem, and academic achievement. This study favors the impact of the affective variables on academic achievement, but reciprocal influence would also be evident. Thus, it would appear that educational institutions such as East Arkansas Community College (EACC) should not consider affective and cognitive growth as separate, unrelated dimensions of the educational process. Instead, academic achievement should occur within an atmosphere that emphasizes a positive self-esteem, low anxiety, and an internal locus of control.

Administrators and instructors should not assume that simply raising a student's self-esteem, increasing his internal locus of control, or decreasing his anxiety will have direct and immediate effects on a student's academic achievement. The reverse is also true; namely academic success will not necessarily increase self-esteem or internal locus of control or decrease anxiety.

In this study, the two treatments had an observable behavior modifying effect on a sample of college students. As the student began to see the cause and effect relationship between actions and rewards,

anxiety was reduced, self-esteem and internal locus of control were increased, and a pattern of academic success ensued. If this difference in the affective domains can be repeated through further examination of the treatments, then grades could improve and attrition might be reduced.

Thus, it is evident that achievement is related to affective variables such as self-esteem, anxiety, and locus of control. Perhaps even more important, there appears to be a causal relation between the affective and cognitive domains. The exact nature and scope of the causal relationships between the domains must be refined by future research, but the implication for educators is clear: the educational and psychological growth of students are interdependent; success in one domain will have a direct effect on success in the other.

APPENDIX A

PRETEST-POSTTEST CONTROL GROUP DESIGN

GROUP	RANDOM ASSIGNMENT	MEASUREMENTS	TREATMENT	MEASUREMENT
I	R	O_1	X	O_2
II	R	O_3	X	O_4
III	R	O_5		O_6

ALL GROUPS WERE SIMILAR OR QUITE COMPARABLE ON ALL VARIABLES

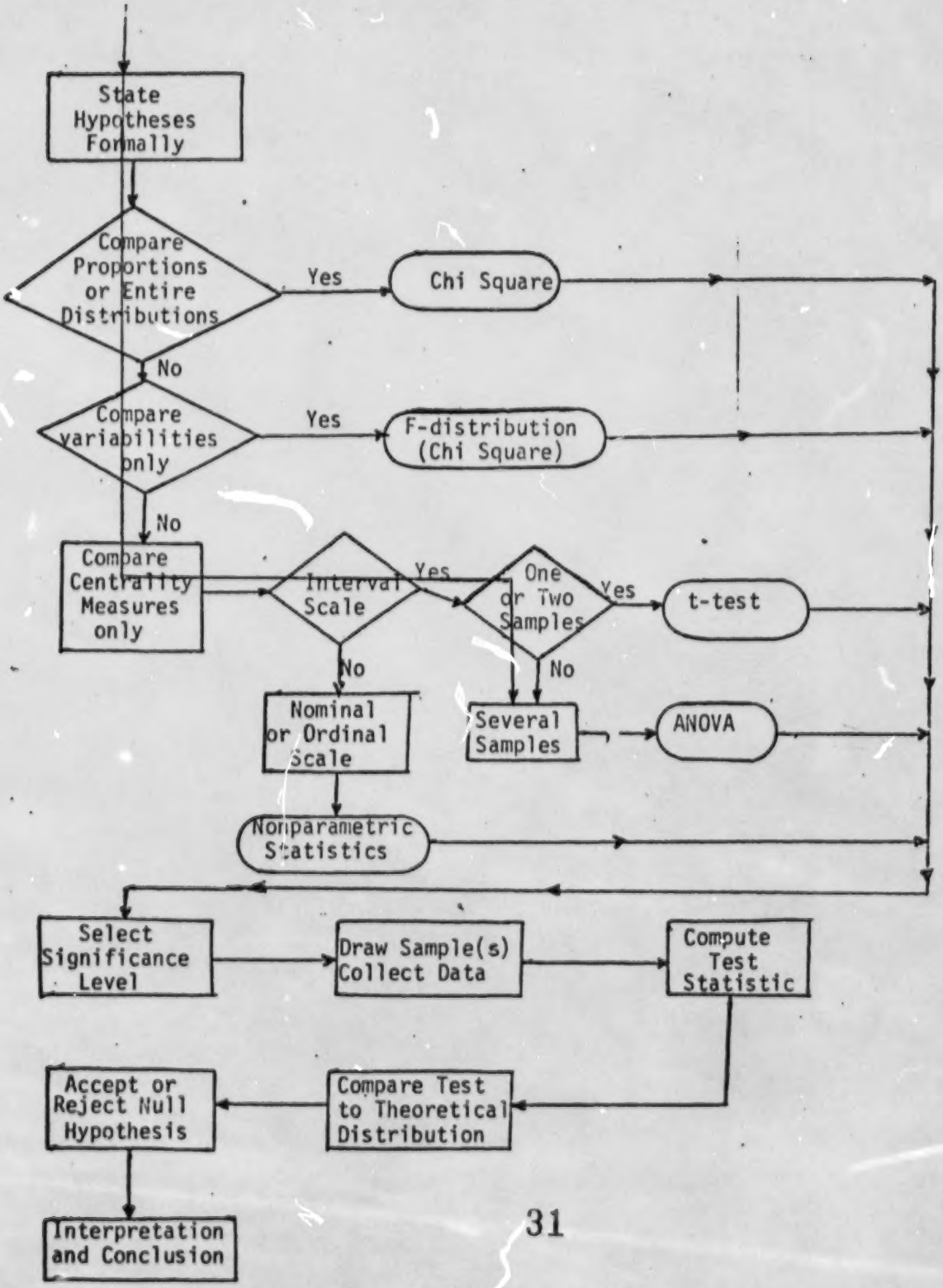
THREATS TO INTERNAL VALIDITY

SELECTION
HISTORY
MATURATION
TESTING EFFECT
INSTRUMENTATION EFFECT
STATISTICAL REGRESSION
EXPERIMENTAL MORTALITY

THREATS TO EXTERNAL VALIDITY

INTERACTION OF SELECTION & TREATMENT EFFECTS
PRETEST SENSITIZATION
REACTIVE EFFECT
MULTIPLE TREATMENT INTERFERENCE

Flow-Chart For Hypothesis Testing



APPENDIX B

Instruments
Not Filmed
Due to Copyright
Laws

APPENDIX C

TABLES

Table 1

Pretest and Posttest Group Mean Anxiety Scores and the Adjusted Group Mean Scores

	Treatment 1	Treatment 2	Control 3
TMAS (pre)	24.267	26.667	24.933
TMAS (post)	15.067	18.200	21.800
Adj. Mean	15.988	16.958	22.120

Table 2

Summary of Analysis of Covariance for Anxiety Scores

Source of variance	DF	Sum of SQ.	Mean SQ.	F	Probability
Equality of Adj. cell means	2	325.871	162.935	3.606	.036
Zero Slope	1	1117.253	1117.253	24.727	.000
Error	41	1852.478	45.182		
Equality of Slopes	2	52.516	26.258	.569	.570
Error	39	1799.961	46.152		

Table 3

t Test Comparisons and Level of Significance for Paired Group Adjusted Means on Anxiety

	T_1		T_2	
	t	P	t	P
T_2	.39	$\leq .70$		
Control	2.50	$\leq .02$	2.09	$\leq .05$

Table 4

Pretest and Posttest Group Mean Scores on Locus of Control and the Adjusted Group Mean Scores

	Treatment 1	Treatment 2	Control 3
LC (pre)	15.133	15.533	16.200
LC (post)	7.533	9.867	13.867
Adj. Mean	7.747	9.905	13.613

Table 5

Summary of Analysis of Covariance for Locus of Control Scores

Source of Variance	DF	Sum of SQ.	Mean SQ.	F	Probability
Equality of Adj. Cell Means	2	259.653	129.826	7.369	.001
Zero Slope	1	96.899	96.899	5.500	.023
Error	41	722.299	17.617		
Equality of Slopes	2	72.396	36.198	2.172	.127
Error	39	649.903	16.664		

Table 6

t Test Comparisons and Level of Significance for Paired Group Adjusted Means on Locus of Control

	T_1		T_2	
	t	p	t	p
T_2	1.41	≤.167		
Control	3.80	.0005	2.41	.02

Table 7

Pretest and Posttest Group Mean Scores on Self-esteem and the Adjusted Group Mean Scores

	Treatment 1	Treatment 2	Control 3
SE (pre)	55.200	55.466	55.466
SE (post)	77.599	62.133	64.800
Adj. Mean	77.694	62.086	64.752

Table 8

Summary of Analysis of Covariance for Self-esteem Scores

Source of Variance	DF	Sum of SQ.	Mean SQ.	F	Probability
Equality of Adj. Cell Means	2	2090.796	1045.398	3.264	.048
Zero Slope	1	2707.535	2707.535	8.454	.005
Error	41	13128.168	320.199		
Equality of Slopes	2	506.710	253.355	.789	.464
Error	39	12621.457	323.627		

Table 9

t Test Comparisons and Level of Significance for Paired Group Adjusted Means on Self-esteem

	T_1		T_2	
	t	p	t	p
T_2	-2.39	≤.022		
Control	-1.98	≤.054	.408	.685

Table 10

Pretest and Posttest Group Mean Scores on Achievement and the Adjusted Group Mean Scores

	Treatment 1	Treatment 2	Control 3
Ach (pre)	7.066	6.733	8.066
Ach (post)	8.866	7.933	8.000
Adj. Mean	9.053	8.400	7.346

Table 11

Summary of Analysis of Covariance for Achievement Scores

Source of Variance	DF	Sum of SQ.	Mean SQ.	F	Probability
Equality of Adj. Cell Means	2	21.883	10.941	9.372	.000
Zero Slope	1	384.804	384.804	329.637	.000
Error	41	47.861	1.167		
Equality of Slopes	2	2.101	1.050	.895	.416
Error	39	45.760	1.173		

Table 12

t Test Comparisons and Level of Significance for Paired Group Adjusted Means on Achievement

	T_1		T_2	
	t	p	t	p
T_2	-1.65	$\leq$.106		
Control	-4.30	.0001	-2.639	.012

Table 13

Correlations of Dependent Variables

		$TMAS_1$	$TMAS_2$	SE_1	SE_2	LC_1	LC_2	ACH_1	ACH_2
$TMAS_1$	r	1.000	.584	-.189	-.205	-.133	.067	-.088	-.110
	p	.001	.001	.211	.176	.382	.659	.564	.470
$TMAS_2$	r	1.000	-.244	-.452	.171	.429	-.229	-.330	
	p	.001	.106	.002	.260	.002	.129	.027	
SE_1	r	1.000	.386	-.146	-.144	.194	.236		
	p	.001	.009	.337	.344	.200	.118		
SE_2	r	1.000	-.326	-.375	.048	.099			
	p	.001	.029	.011	.751	.518			
LC_1	r	1.000	.358	-.214	-.234				
	p	.001	.016	.157	.122				
LC_2	r	1.000	-.505	-.556					
	p	.001	.001	.001					
ACH_1	r	1.000	.917						
	p	.001	.001						
ACH_2	r	1.000							
	p	.001							

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